

Results of Corps ARRA-funded levee periodic inspections

Sacramento District Public Affairs Office

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US Army Corps of Engineers
Sacramento District

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Who's Who

From the Corps' Sacramento District:

- Mike Mahoney – Levee Safety Officer
- Meegan Nagy – Levee Safety Program Manager
- DeDe Cordell – Chief, Public Affairs
- Chris Gray – Public Affairs Office



What's the Corps' role in inspecting levees?

- Under our national Levee Safety Program, revamped in 2006, the Corps inspects the levees in its inventory (of about 14,000 levee miles) once a year (annual inspection) and, and in more detail, once every five years (periodic inspection).
- Inspection findings are used to determine eligibility for the Corps' Rehabilitation and Inspection Program (RIP), our authority to provide federal aid for repairing or rehabilitating levees damaged by flooding or storms. They also provide a picture of levee conditions for the public and partner agencies.
- In California, it's different. Historically, DWR has inspected the levees in its inventory twice annually, and we've used their results to determine eligibility for RIP, auditing about 10% a year for quality assurance.
- ARRA funding allowed us to jumpstart our program of periodic inspections in California, which we are conducting for the first time here. We awarded \$4.6 million in contracts to engineering firms (including two in California) to conduct the inspections according to Corps levee safety criteria.



What did we inspect?

- We inspected the most-populated/highest-risk areas first: including Sacramento, Yuba City/Marysville, and the Stockton area; a total of 26 systems. We've completed inspection on 10 systems in these areas, and are finalizing inspections and analyses on the rest (16).
 - ▶ **Quick Figures:**
 - **Levee miles in the Central Valley: 6,517 (Source: California DWR)**
 - **Central Valley levee miles in the USACE Levee Safety Program: 1,760.**
 - **Levee miles inspected/to be inspected with ARRA funds: 422**



Timeline

- February 2009 – American Recovery and Reinvestment Act enacted
- September 2009 – Corps' Sacramento District obligates ARRA contracts for levee inspections
- December 2009 – Inspections begin
- May 2010 – Completed inspection results shared with local sponsors
- July 2010 – Draft eligibility shared with sponsors
- September 2010 – Final eligibility letters mailed to sponsors for completed inspections.
- Winter 2010 – Inspection results from West Sacramento, Stockton scheduled for release



What did we look for?

- Anything that would jeopardize levee performance in a flood. For example, slope stability issues, rodent holes, seepage, bank caving.
- Also, anything that would inhibit inspection of levees, or access to levees during a flood fight.
- Overall functioning of a levee system. A system carries the rating of its lowest-rated segment. So, a segment rated unacceptable would result in an unacceptable rating for the system it belongs to.
- Under the California Central Valley Levee Vegetation Framework, certain categories of deficiencies won't result in inactive status in the RIP program, including: encroachments, vegetation (trees), seepage, erosion, channel capacity. No systems lost RIP eligibility because of trees on their levees.



Context

- The Corps revamped its Levee Safety Program in 2006. Since then, we've inventoried all the levees in the program (2,000 systems, or about 14,000 miles of levees – by no means all levees in the U.S.), improved levee inspection procedures, and are continuing to review and revise our levee policies and procedures. (For example, our levee vegetation variance and levee certification policies.)
- Becoming inactive in RIP does not automatically result in levee decertification.
- We will still help flood fight levee systems inactive in RIP.
- Active status in RIP is not a guarantee of safety.



RESULTS



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Sacramento

Levee System	Risk Reduction Area	Maintaining Agency(ies)	System Rating	Rehabilitation and Inspection Program (RIP) Status	Major Issues
Dry Creek Right Bank	Sacramento/Del Paso	American River Flood Control District	Minimally Acceptable	Active	Encroachments
Dry Creek, NEMDC, Arcade Creek	Sacramento/Del Paso	American River Flood Control District	Minimally Acceptable	Active	Encroachments
American River Right Bank, NEMDC	Sacramento/Del Paso	American River Flood Control District	Minimally Acceptable	Active	Encroachments
Natomas	Natomas	Reclamation District 1000	Unacceptable*	Active	Erosion/Encroachments
City of Sacramento – American River Left Bank	Sacramento	American River Flood Control District/City of Sacramento/DWR (MA 9)	Unacceptable*	Active	Encroachments /Seepage

***Systems with deficiencies that fall into categories currently covered by the California Central Valley Flood System Improvement Framework may receive an “Unacceptable” rating but will not lose RIP active status.**



Natomas



An example of encroachment in Natomas.



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Yuba City/Marysville

Levee System	Risk Reduction Area	Maintaining Agency(ies)	System Rating	Rehabilitation and Inspection Program (RIP) Status	Major Issues
City of Marysville – System 1	Marysville	Marysville Levee District	Unacceptable	Inactive	Slope Stability
City of Marysville – System 2	Marysville	Marysville Levee District	Unacceptable	Inactive	Unaddressed previously noted deficiency
Feather River Right Bank – Sutter Bypass East Bank Levee System	Yuba City, Live Oak, Gridley	DWR (MA 3, 7&16)/Levee Districts 1 & 9/Reclamation District 777	Unacceptable	Inactive	Slope Stability/ Underseepage Relief Wells/ Depressions and Rutting



Yuba City/Marysville



An example of bank caving in the Yuba City/Marysville area.



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Stockton Area

Levee System	Risk Reduction Area	Maintaining Agency(ies)	System Rating	Rehabilitation and Inspection Program (RIP) Status	Major Issues
Duck Creek/Boggs Tract	Stockton/Port of Stockton	Reclamation District 404	Unacceptable	Inactive	Slope Stability/ Settlement/ Erosion/ Animal Control
San Joaquin River East	Lathrop, West Manteca	Reclamation Districts 0017, 2064, 2075, 2094, 2096	Unacceptable	Inactive	Rutting/ Depressions/ Animal Control



Stockton area



Levee erosion in the Stockton area.



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Stockton area



Slope stability issue in the Stockton area.



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What's next?

- Periodic inspections continue in Stockton (14 systems), Colusa and West Sacramento. Results are scheduled for winter 2010 release.
- When deficiencies are corrected, we'll reinstate RIP active status as quickly as possible.
- Periodic inspection cycle will also continue, with other Central Valley levees due for inspection next year.



Recap

- Levee safety is a shared responsibility.
- System maps and more detailed results (indicating levee segment ratings) are available on our website here:
http://www.spk.usace.army.mil/organizations/cespk-co/levee_safety
- It's working. With the information on deficiencies we've provided, Stockton area agencies, for example, have already made great progress in rehabilitating their levees.



QUESTIONS?



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